

Claims

1. A cutting tool for materials, in particular made of polyurethane elastomers, which is controllable manually or program-controlled, comprising a cutting head (10) with a driving device (20), a blade holder (30) and a cutting knife (35), characterized in
that the cutting tool (100 ; 100') has at least one cutting head (10 ; 10'), whereby the driving device (20) comprises in a way known in itself a driving motor (21) for the blade holder (30) movable to-and-fro in cutting head longitudinal axis (L) with the cutting knife (35) or consists of
 - a driving motor (21) with a drive shaft (22) running in cutting head longitudinal axis (L),
 - a cam disk (25) actively connected with the drive shaft (22) of the driving motor (21) driven rotating about the drive shaft longitudinal axis (L2) with control surfaces (40, 41) lying in different planes, configured on the side opposed (25a) to the driving motor (21),
 - a roller (26) actively connected with one of the control surfaces (40, 41) of the cam disk (25),
 - a lifting rod or tappet push rod (45) actuated by means of a spring (27) which is actively connected with the roller (26) and the cam disk (25) over a coupling piece (46) and which carries at its free end (45a) the blade holder (30) for the cutting knife (35).

2. A cutting tool for materials, in particular made of polyurethane elastomers, which is controllable manually or program-controlled, comprising a cutting head (10) with a driving device (20), a blade holder (30) and a cutting knife (35), characterized in

that a separating agent (160) is introduced into the cut (180) produced in the material by its cutting head (10).

3. A cutting tool for materials, in particular made of polyurethane elastomers, which is controllable manually or program-controlled, comprising a cutting head (10) with a driving device (20), a blade holder (30) and a cutting knife (35),
characterized in
that an anorganic or an organic fluorescent substance (160A, 160B) is introduced into the cut (180) produced in the material by the cutting head (10).
4. A cutting tool for materials, in particular made of polyurethane elastomers, which is controllable manually or program-controlled, comprising a cutting head (10) with a driving device (20), a blade holder (30) and a cutting knife (35),
characterized in
that a metallic substance (160B) is introduced into the cut (180) produced in the material by the cutting head (10).
5. A cutting tool according to claim 1 or 2,
characterized in
that the lifting rod or the tappet push rod (45) is brought to stop on the control surfaces (40, 41) of the cam disk (25) by means of the spring (27).
6. A cutting tool according to any of the claims 1, 2 and 5,
characterized in
that the cam disk (25) has two control surfaces (40, 41) with different heights of the recesses (40a) and elevations (41a).
7. A cutting tool according to any of the claims 1, 2, 5 and 6,
characterized in

that the number of the elevations of the lifting rod or tappet push rod (45) is changeable by changing the number of revolutions of the driving motor (21).

8. A cutting tool according to any of the claims 1, 2, 5 to 7, characterized in
that the cam disk (25) in the cutting head (10) can be interchanged with cam disks with differently configured control surfaces (40, 41) and with differently configured recesses (40a) and elevations (41a).
9. A cutting tool according to any of the claims 1, 2, 5 to 8, characterized in
that, for producing V-cuts (50, 50') in the material to be cut (70), the cutting tool has two cutting heads (10, 10') with the characteristics of the claims 1 to 6, whereby both cutting heads (10, 10') are in an angular position to each other so that both cutting heads (10, 10') are at an angle with each other with their longitudinal axes (L, L1).
10. A cutting tool according to claim 9, characterized in
that both cutting heads (10, 10') are fixed to each other in a predetermined angular position and are not changeable in their angular positions.
11. A cutting tool according to claim 9, characterized in
both cutting heads (10, 10') of the cutting tool (100') are configured changeable in their angular positions for configuring V-cuts (50, 50', 50'') in the material to be cut (70) with different V-profiles (50a, 50'a, 50''a).
12. A cutting tool according to any of the claims 1 to 4, characterized in

that a separating agent (160) and a fluorescent substance (160A) and/or a metallic substance (160B) is introduced by the cutting head (10) into the cut (180) produced in the material.

13. A cutting tool according to any of the claims 1 to 4 and 12, characterized in
that a fluorescent substance (160A) and/or a metallic substance (160B) is added to the separating agent (160).
14. A cutting tool according to any of the claims 1 to 4, 12 and 13, characterized in
that the cutting tool (100) has a feeding pipe (150) placed on the cutting head (10) or in the cutting head (10) for a separating agent (160) and/or a fluorescent substance (160A), whereby the feeding pipe is connected at the one end (150a) with a preferably micro metering system (170) and the other end (510b) of which runs into the area of the cutting knives (35).
15. A cutting tool according to any of the claims 1 to 4, 12 to 14, characterized in
that the feeding pipe (150) for the separating agent (160) is configured as a capillary hose (151) which runs into the blade holder (30) and which turns into a bore hole (155) which is formed in the blade holder (30) and in the cutting tool (35) and the outlet opening (156) of which lies in the cutting and separating area of the cutting knife (35).
16. A cutting tool according to any of the claims 1 to 4, 12 to 15, characterized in
that the outlet opening (156) of the bore hole (155) in the cutting knife (40) lies in a rounded taper (141) in one (142) of the corner areas of the cutting knife (35).

17. A cutting tool according to any of the claims 1 to 4, 12 to 16,
characterized in
that the separating agent (160) is configured in such a way that it
avoids an automatic new glueing together of the cut in the material
of the cut.
18. A cutting tool according to any of the claims 1 to 4, 12 to 17,
characterized in
that the separating agent (160) is made of a dispersion with waxes
and silicones in a solvent mixture.
19. A cutting tool according to any of the claims 1 to 4, 12 to 18,
characterized in
that anorganic or organic fluorescent substances in liquid or solid
form are added to the separating agent (160).
20. A cutting tool according to any of the claims 1 to 4, 12 to 19,
characterized in
that a substance with metallic propersties, for example metal
powder, is added to the separating agent (160), this substance
clearly differing from the behaviour of plastics by ultrasonic
influence or by other measuring methods.